

# Dimensions

By Peter David Smith

In the English language we have come, in the past 100 years or so, to use the word “dimension” in two conflicting senses.

Because of science fiction’s relationship to fantasy and adventure fiction we have all fallen into the habit of thinking that “another dimension” is a sort of exciting place in which to have a great adventure, like fairyland or Narnia or the world “through the looking glass”.

At the same time we all know that the correct usage of “dimension” is as a direction of measurement. A measurable aspect of an object.

The key dimensions of an object are length, width, height, volume, temporal duration, mass, energy, topology and density. Volume is arrived at by measuring the three spatial dimensions and doing a calculation. However, the volume multiplied by the temporal duration tells a different story. Density is arrived at by the mass times the volume and the energy is measured by multiplying the mass by the velocity of light squared. Yet, again, the time dimension transforms the simple equation into a more complex and difficult quantity. Topology is another measurable part of an object and the relationship between the energy topology, such as the vortex of a magnetic field, changes over time.

If we are measuring the dimensions of the star Sol, our local sun, it’s going to be a bit more than just a ball of atomic fire. The sun will need to be seen in its temporal form of a flaming bar following its path around the galactic axis while the Earth and the other planets spiral around it like serpents around a caduceus.

Temporal topology and energy topology vary from physical volume topology.

Do you see how this way of thinking builds up from measuring the three dimensions and then getting the volume and the mass, which lead to the density?

The tricky bit is the velocity of light squared, which is impossible because the velocity of electro-magnetic radiation never speeds up, let alone “squares”. Instead of speeding up, the velocity of light (like all forms of electro-magnetic radiation) is constant but the frequency of it is forced to change to a doppler-shifted blue or red.

So, therefore, the “C squared” part of Einstein’s equation exists only in a mathematical abstraction.

So these are the dimensions of an object which can be measured:

1. Height.
2. Width.
3. Length.
4. Volume.
5. Mass.
6. Density.
7. Energy.
8. Duration in time.
9. Topology.

That’s nine dimensions, so far. Height, width and length form an obvious trinity, as do mass, volume and density.

Speculatively, we can look at the remaining three dimensions to see, just on the off chance, that may be something interesting there. And what immediately jumps out at me is the behaviour of waveforms in relation to moving shapes such as the displaced water in front of a moving boat or the plasma waveforms in the solar winds. A trinity of Energy, Topology and Time is certainly relevant to the creation of solitons in solar emissions and to understanding the forces which cause displaced water to temporarily act as a “lump of water” with its own topological boundaries.

The dynamics of these components of the real world change their behaviour depending on balances and asymmetries.

If we then think in terms of other possible measurements (other than the listed nine that is) say for instance the measurement of forces like magnetism or gravitation, we will very quickly realise that these are already covered by the umbrella categories of “energy” and “mass” respectively.

But all of these dimensional features are connected and so we read of all the various theories and experiments in which space-time is seen as warped by the presence of large mass within a finite volume and the energy of the atom can be destructively released to an amount which is measured in multiples of lightspeed.

The Hafele–Keating experiment (1971) and the JILA atomic clock experiment (2022) show that Einstein was right about moving clocks going slower than non-moving clocks (relative to their frame of reference).

The difference in relativistic rates of atomic clocks means that the time-travel deniers could be mistaken about the idea that entropy causes time travel to be impossible.

The frames of relativistic reference between moving clocks are not closed systems and they would need to be closed systems if entropy was only one-way.

That's a huge discovery!

This is where a speculative frame of mind takes us into amazing possibilities.

Consider the movements of people throughout history. Populations moving because of climate conditions, because of environmental advantages for agriculture, because of wars, diseases, famines or because of ideas and philosophies.

These historical movements of human tribes and groups are continually displacing natural habitats and earth resources. Meanwhile the electrostatic and magnetic fields of the planet are affecting the movements of insects, birds, fish and storm clouds.

Environmental factors in human history are often recorded in myths and legends. Stories help us to discover more about the effect on humans of the Aurora Borealis or the Trade Winds and of phenomena like solitons in the magnetic field or solitons in plasma waves or matter waves and in gravitation.

Solitons in gravitation could be significant in human's experience of time and paradox.

Because of the type of person I am I tend to couple the debunking of pseudo-science with the considering of possibly entirely new understandings of phenomena.

So while the traditional cranks continue to watch old episodes of “The X-Files” and to talk about so-called “flying saucers” I, instead, as a non-traditional crank, speculate about the physics of unusual weather, perhaps four or even nine dimensional weather phenomena.

The famous TV series “The Twilight Zone” tells us, in its introductory speech, that there is a door and that we *“Unlock this door with the key of imagination. Beyond it is another dimension: a dimension of sound, a dimension of sight, a dimension of mind.”*

So, was Rod Serling right? Is there a “dimension of the mind”?

Well, I suppose that would be the dimension of human culture and perception.

There certainly is a great body of study into the human experience of the unexplained and of our many attempts to explain it.

For example, a scientist will tell you that the magnetic and gravitational waveforms travel across the sky, enter the Earth at the North Pole (causing the Aurora Borealis) travel through the centre of the Earth and exit through the South Pole (causing the Aurora Australis) ready then to make the journey across the sky again back to the North Pole.

An ancient Greek will tell you about Helios, who drives the sun chariot across the sky by day and under the Earth by night.

These are resonances in the storytelling function of the human mind. At some level of the unconscious we seem to know a lot more than we think we do.

I've written other essays which touch upon the psychological resonances of the brain and body's physical structures. Harmonics in the vibration patterns of the nervous system, music and archetypes.

As I'm thinking more and more about solitons and interference patterns in waveforms I'm also thinking about semiosis as a waveform and therefore the possibility of Rod Serling's "Dimension of the Mind" as permitting a forward momentum of wavelike semiosis and interference patterns in all directions creating something like a soliton of narrative promulgation. Absolutely mad! But still worthy of constructive speculation. The more usual term would be "cycle" as in "song cycle" or "myth cycle". The hero's journey as a sine wave, square wave, saw tooth wave etc.

Doctor Selene Atasoy, a neuroscientist working at Oxford University speaks in terms of "Archetypal Harmonics".

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